

# HARD DISK FAILURE PREDICTOR

GORLYAN ISAAC, 14/U/6365/PS, 214003014

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## 1 introduction

The aim of this document is to provide a high light of how hard drive failure prediction can be improved and summarize a range of literature to highlight themes and generate recommendations for future work in this area by Hard Drive Failure Predictor. This section contains the background which purposely describes the origin of hard disk failure and points out past and recent studies, problem statement pointing out research gaps, objectives and scope of the study. It will help clarify to the reader how fulfillment of the research aims and objectives will improve on data storage through effective hard drive failure detection.

### 1.1 background of the problem

Storage systems are growing larger quickly with the rapid development of information technology. Although hard drives are reliable in general, they are believed to be the most commonly replaced hardware components. Moreover, with the increase of single drive and whole system capacity, block and sector level failures, such as latent sector errors and silent data corruption, cannot be ignored anymore. For instance one drive failure with any other sector error will result in data loss, which may be a disaster to data centers.

### 1.2 problem statement

Data loss especially in developing countries has been a major problem affecting both novice or occasional users and expert users. This is due to the fact that 95 percent of imported computer hard ware devices like hard drives are second hand and the people are ignorant of how to detect hard drive failure or even check whether they are in good condition. This has led to abrupt disk crashes, therefore putting Banking institutions, web hosting companies and data centers at a risk of losing vast data beyond recovery. The SMART information format is not consistent with the current SMART standard. These factors undermine the usability of these models.

The motivation of this research is to come up Hard disk failure predictor which will address this problem and improve the situation at hand. This is by

providing the users with functionality to use their mobile phones to examine the health status and durability of their hard drives in order to predict hard drive failure and reduce the risks of data loss. There will be retrieval of any lost data in case there has been a mistake in prediction.

## **2 general objectives**

This investigation is intended to create an effective real time hard drive failure detection module that is able to effectively predict hard drive malfunction and monitor their physical condition using a smart phone in order to ensure data safety.

## **3 specific objectives**

To make a clear judgment concerning detection and prediction of hard disk failure to maximize data backup and safety. To critically assess how users maintain and use their hard drives in most of Kampala data centers. To evaluate and classify operations of data recovery schemes by different data administrators.